

CHATHAM CENTRAL SCHOOL DISTRICT

ENROLLMENT PROJECTION 2012-2021

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INTRODUCTION

The following enrollment projection has been prepared by FACTS at the request of the Chatham Central School District.

Data and information from the following sources were utilized in compiling this report:

- School District
- United States Census Bureau
- New York State Department of Health
- Local Building Inspector(s)

FACTS has utilized diligent research and generally accepted formulas and procedures in preparing these projections. It must be recognized, however, that given the many variables comprising such projections, that caution must be exercised in the interpretation and application of these projections. A thorough review for accuracy of the data contained in this report should be conducted by the school district and prompt notification of any discrepancies provided to FACTS for correction.

PROJECTION METHODOLOGY

The Cohort Survival Method has been used in preparing these projections. This formula has proven to be highly reliable and is used extensively for enrollment projections for school districts in New York State.

The calculation of enrollment projections is based on the following data and procedures:

- Six years of actual district enrollment by grade
- Calculation of the survival ratios by grade level
- Projection of Kindergarten enrollment based on resident live births

The survival ratio expresses a quantitative relationship between the numerical size of a grade in a given year in comparison to the size of the next lower grade in the previous year. The number of students in a grade in a given year is divided by the number of students in the next lower grade in the previous year (i.e.; Grade 5 in 2008 divided by Grade 4 in 2007). If the quotient is greater than 1.0, the number of students has increased; conversely, if the quotient is less than 1.0, the number of students has decreased. Five years of actual survival ratios are calculated for each grade 1-12 and the five-year average is determined. This average is then applied by grade to determine the ten-year projected enrollment for each grade 1-12.

The calculation of projected Kindergarten enrollment is based on the analysis of Resident Live Birth data. A ten-year history of live birth data is collected. Each of the first five years of live birth data is compared to the actual Kindergarten enrollment five years hence and the survival ratio is calculated (i.e.; 2002 live births to 2007 Kindergarten enrollment, etc.). The five annual survival ratios are averaged and that average is applied to the next five years of live birth data to obtain the first five years of annual projected Kindergarten enrollment (i.e.; 2007-2011 live births to project 2012-2016 Kindergarten enrollments). For purposes of providing a ten-year enrollment projection, the Kindergarten enrollment is projected for the last five years of the projection at the same number appearing in the fifth year.

In addition, the following factors which could potentially impact these projections are also researched and analyzed:

- Significant changes in residential construction
- Major changes in the local employment base
- Shifts in the non-public school population

The reliability of any enrollment projection must clearly be understood. Projections based on current and historical actual enrollments are the most reliable. Those based on historical live birth data are somewhat less reliable. In addition, the time frame and subset of the projections also play an important part in the reliability. Projections for the immediate future will be more reliable than those in later years, for example. Projections for the total K-12 district enrollment will also be more reliable than those for any particular grade in any given year. Therefore, these projections should be updated annually to reflect the latest live birth and actual enrollment data.

For the purposes of this study, data for the Towns of Austerlitz, Canaan, Chatham and Ghent and the Village of Chatham have been researched.

Annual Updates: Annual updates of original projections prepared by FACTS are limited to the collection and research of the following information:

- Live births
- District enrollment
- District non-public school enrollment

The collection of information regarding future residential construction programs are not included in the Annual Update pricing fee.

DEMOGRAPHIC DATA

POPULATION TRENDS:

Table I reflects the population data from the 1990, 2000 and 2010 census as provided by the U.S. Census Bureau. The Town of Austerlitz experienced a minimal loss of population between 1990 and 2000 and a moderate increase in population between 2000 and 2010. The Town of Canaan realized a minimal gain between 1990 and 2000 and a minimal decline in population between 2000 and 2010. The Town of Chatham had a minimal loss of population during the twenty year period. The Village of Chatham had a moderate gain between 1990 and 2000 and a very minimal decline between 2000 and 2010. The Town of Ghent realized a moderate increase in population between 1990 and 2000 and a minimal loss between 2000 and 2010. Columbia County essentially remained unchanged during the twenty year period.. Since these trends are reflected in the district's historical enrollments, no adjustments to the projection formulas are necessary.

TABLE I POPULATION TRENDS						
Town/Village	1990	2000	1990-00 % Change	2010	2000-10 % Change	1990-10 % Change
Austerlitz (T)	1,456	1,453	-0.21	1,654	13.84	13.60
Canaan (T)	1,773	1,820	2.65	1,710	-6.05	-3.56
Chatham (T)	3,576	3,483	-2.60	3,356	-3.65	-6.16
Chatham (V)	1,920	1,758	9.22	1,770	0.69	-7.82
Ghent (T)	3,729	4,284	14.89	4,404	2.81	18.11
Columbia County	62,982	63,094	0.18	63,096	0.01	0.19
Source: U.S. Census Bureau						

RESIDENT LIVE BIRTHS:

Table II shows the actual number of resident live births for the nine-year period 2002-10. The total births for 2011 have been estimated at the average of 2008 through 2010 of 69.

We have changed to a new resident live birth data base developed by the state Department of Health in which they count births by school district boundaries. They feel that this is the most accurate data base available.

TABLE II RESIDENT LIVE BIRTHS										
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011*
District	79	77	69	81	77	67	79	59	68	69

* Estimated
Source: New York State Department of Health

RESIDENTIAL HOUSING UNITS:

Table III reflects the number of building permits issued for single family and multifamily homes.

The following details the discussions with the building inspectors.

Town of Austerlitz and Town of Canaan - Mr Smith expects new building permits for 2012 to be at the 2009 and 2010 levels with a slight increase possible in 2013.

Town of Chatham and Town of Ghent - Mr Simonsmeir also expects new building permits for the next two years to be at the same level as 2009 and 2010.

Village of Chatham - There have been no permits issued so far in 2011 and they expect minimal activity in the next two years.

Based on these findings, no adjustments to the projection formulas will be necessary.

TABLE III RESIDENTIAL HOUSING UNITS						
Town/Village	2006	2007	2008	2009	2010	Five-Year Average
Austerlitz (T)	13	12	9	3	4	8
Canaan (T)	2	6	6	5	2	4
Chatham (T)	4	9	6	7	8	7
Chatham (V)	4	2	1	1	0	2
Ghent (T)	31	15	9	7	7	14
Columbia County	54	44	31	23	21	35

Source: U.S. Census Bureau

PUBLIC SCHOOL ENROLLMENT:

Table IV shows the district's nonpublic school enrollment for a five-year period. Enrollment has averaged 146 per year. Any significant changes in this pattern may require a recalculation of the projections in this study.

TABLE IV NONPUBLIC SCHOOL ENROLLMENT					
2006	2007	2008	2009	2010	Five-Year Average
152	149	149	142	140	146

ENROLLMENT PROJECTIONS

HISTORICAL ENROLLMENT:

Table III depicts the District's actual enrollment by grade level for a six-year period. The grade by grade survival ratios shown in Table IV were calculated from this information.

TABLE III HISTORICAL ENROLLMENT						
Grade	2006	2007	2008	2009	2010	2011
Kindergarten	86	79	84	76	75	84
First	83	88	75	84	80	71
Second	85	85	92	75	87	84
Third	83	78	85	92	74	85
Fourth	107	85	90	84	91	77
Total K - 4	444	415	426	411	407	401
% Change	--	-6.53	2.65	-3.52	-0.97	-1.47
Fifth	103	104	87	90	94	92
Sixth	127	105	112	86	99	99
Seventh	110	120	108	115	90	101
Eighth	114	103	118	108	122	99
Total 5-8	454	432	425	399	405	391
% Change	--	-4.85	-1.62	-6.12	1.50	-3.46
Ninth	118	111	112	124	120	125
Tenth	136	115	111	104	113	121
Eleventh	103	122	112	105	103	109
Twelfth	115	106	119	109	114	99
Total 9-12	472	454	454	442	450	454
% Change	--	+3.81	0.00	-2.64	1.81	0.89
Total K - 12	1,370	1,301	1,305	1,252	1,262	1,246
% Change	--	-5.04	0.31	-4.06	0.80	-1.27

SURVIVAL RATIOS:

The District's historical loss or gain of students from one grade level to the next grade level is reflected in Table IV. These ratios reflect the number of students in a particular grade in one year as compared to the number of students in the next higher grade in the following year. A ratio higher than 1.0 indicates a gain in students and conversely a ratio of less than 1.0 reflects a loss of students. These ratios, by grade level, were calculated individually for a five-year period and the five-year average for each grade level determined. The five-year average was then used to project future enrollments for each grade level.

TABLE IV SURVIVAL RATIOS						
Grade	2007	2008	2009	2010	2011	5-Year Average
K-1	1.0233	0.9494	1.0000	1.0526	0.9467	0.9944
1-2	1.0241	1.0455	1.0000	1.0357	1.0500	1.0311
2-3	0.9176	1.0000	1.0000	0.9867	0.9770	0.9763
3-4	1.0241	1.1538	0.9882	0.9891	1.0405	1.0392
4-5	0.9720	1.0235	1.0000	1.1190	1.0110	1.0251
5-6	1.0194	1.0769	0.9885	1.1000	1.0532	1.0476
6-7	0.9449	1.0286	1.0268	1.0465	1.0202	1.0134
7-8	0.9364	0.9833	1.0000	1.0609	1.1000	1.0161
8-9	0.9737	1.0874	1.0508	1.1111	1.0246	1.0495
9-10	0.9746	1.0000	0.9286	0.9113	1.0083	0.9646
10-11	0.8971	0.9739	0.9459	0.9604	0.9646	0.9544
11-12	1.0291	0.9754	0.9732	1.0857	0.9612	1.0049

PROJECTED KINDERGARTEN ENROLLMENT:

The annual ratios were calculated for a five-year period reflecting the ratio between the actual kindergarten enrollment in each year and the number of live births in each of the preceding five years (i.e.; 2007 actual kindergarten enrollment to 2002 live births, etc.). The five-year average was calculated and applied to the most recent five years of live births to project the subsequent five years of kindergarten enrollment for each projection. Years six through ten of kindergarten enrollment were projected at the same number as the fifth projected year.

TABLE V PROJECTED KINDERGARTEN ENROLLMENT - LIVE BIRTHS						
Year	Live Births	Year	K-Enroll	Birth/K Ratio	Year	Projected K-Enroll
2002	79	2007	79	1.0000		
2003	77	2008	84	1.0909		
2004	69	2009	76	1.1014		
2005	81	2010	75	0.9259		
2006	77	2011	84	1.0909		
FIVE-YEAR AVERAGE SURVIVAL RATIO				1.0418		
2007	67				2012	70
2008	79				2013	82
2009	59				2014	61
2010	68				2015	71
2011	69*				2016	72
					2017	72
					2018	72
					2019	72
					2020	72
					2021	72

*Estimated

TEN-YEAR ENROLLMENT PROJECTION:

Table VI provides a summary by grade groupings of the projections shown in Table VII comparing the projected fifth and tenth years to the base year of 2011.

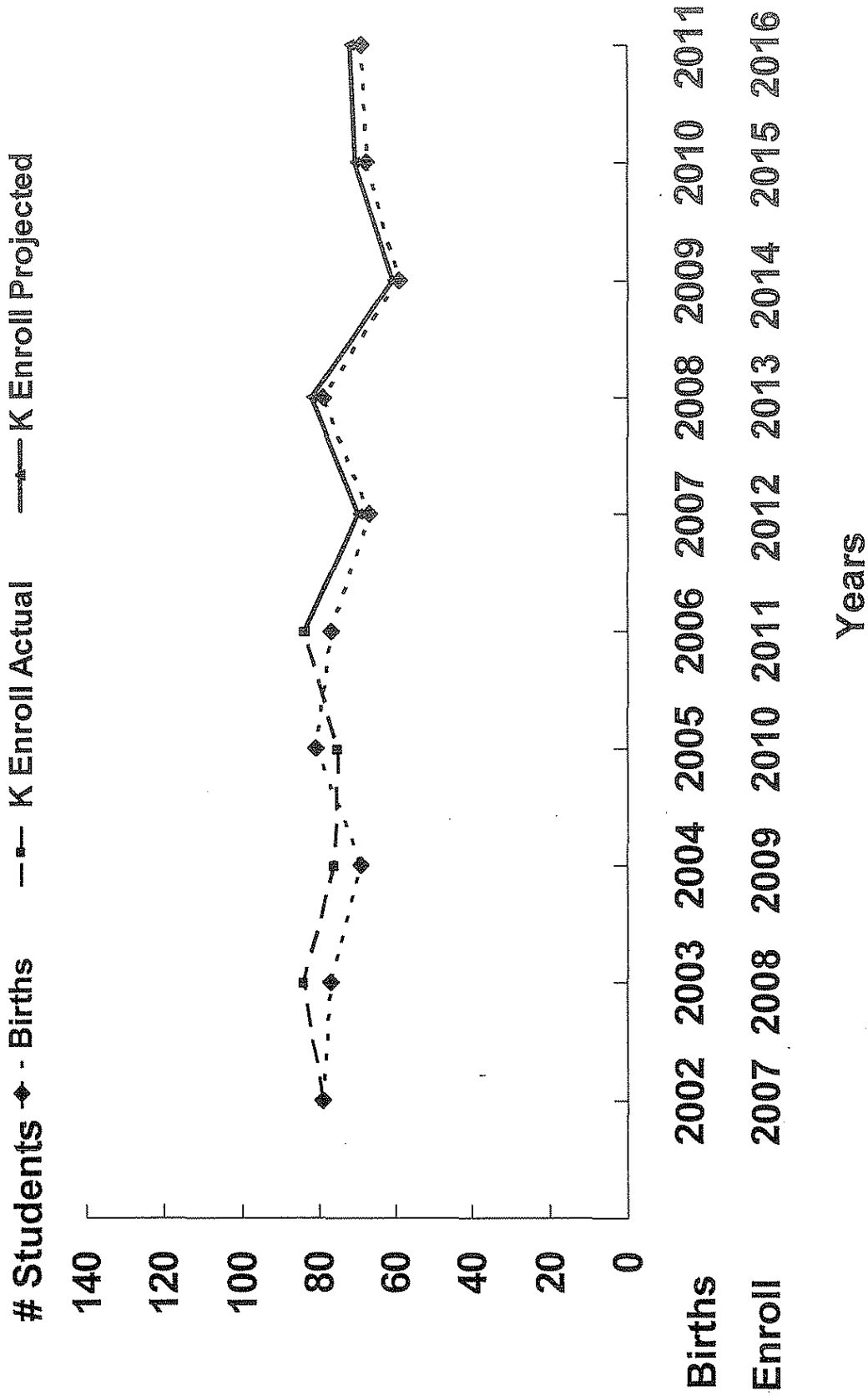
TABLE VI ENROLLMENT PROJECTION SUMMARY					
Grade Range	2011	2016	% Change	2021	% Change
K - 4					
Live Births	401	362	-9.73	365	-8.98
5-8					
Live Births	391	359	-8.19	321	-17.91
9- 12					
Live Births	454	386	-14.98	353	-22.25
K - 12					
Live Births	1,246	1,107	-11.16	1,039	-16.62

**TABLE VII
TEN-YEAR ENROLLMENT PROJECTION - LIVE BIRTHS**

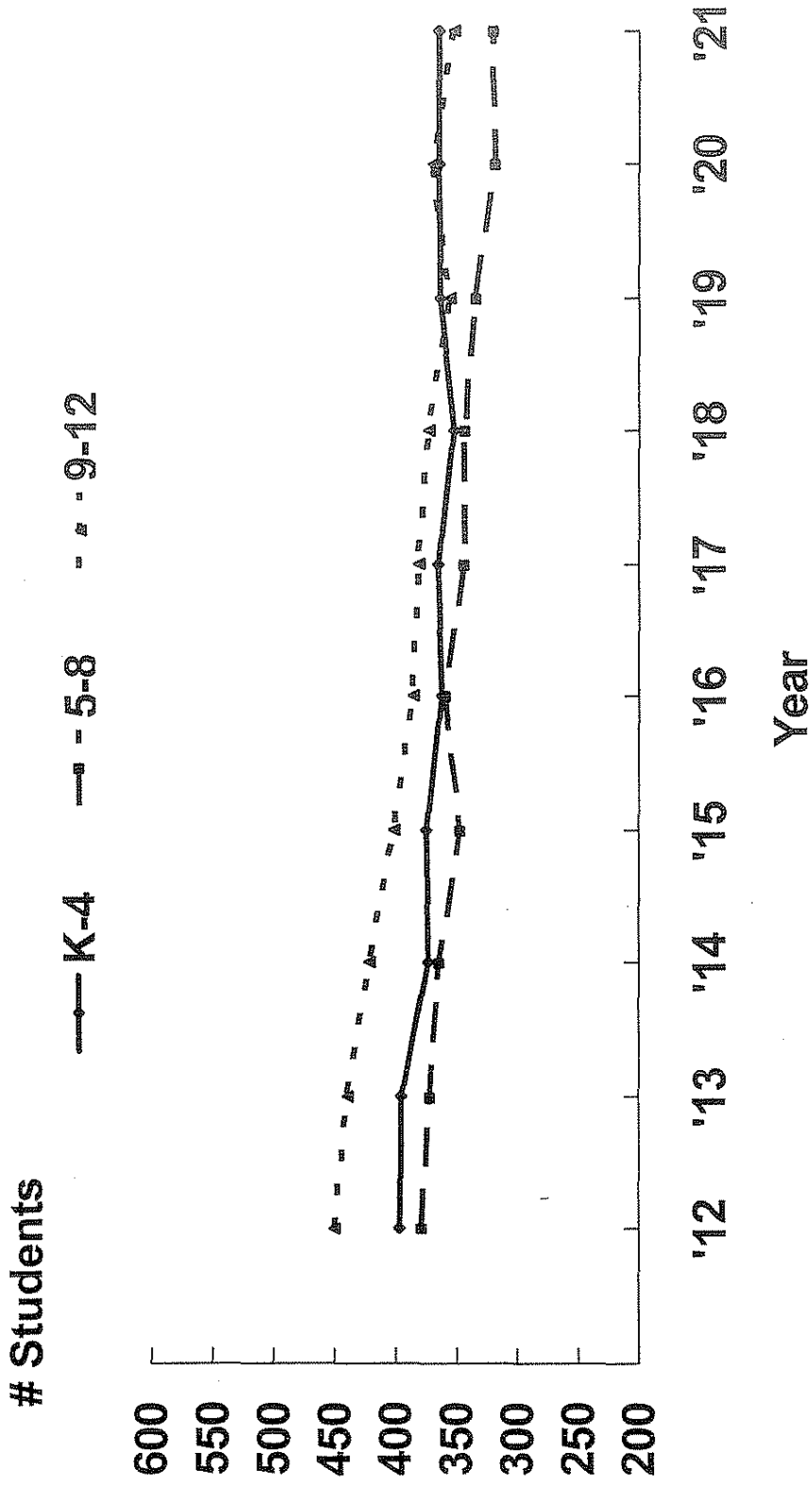
Grade	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Kindergarten	70	82	61	71	72	72	72	72	72	72
First	84	70	82	61	71	72	72	72	72	72
Second	73	87	72	85	63	73	74	74	74	74
Third	82	71	85	70	83	62	71	72	72	72
Fourth	88	85	74	88	73	86	64	74	75	75
Total K - 4	397	395	374	375	362	365	353	364	365	365
% Change	-1.00	-0.50	-5.32	0.27	-3.47	0.83	-3.29	3.12	0.27	0.00
Fifth	79	90	87	76	90	75	88	66	76	77
Sixth	96	83	94	91	80	94	79	92	69	80
Seventh	100	97	84	95	92	81	95	80	93	70
Eighth	103	102	99	85	97	93	82	97	81	94
Total 5-8	378	372	364	347	359	343	344	335	319	321
% Change	-3.32	-1.59	-2.15	-4.67	3.46	-4.46	0.29	-2.62	-4.78	0.63
Ninth	104	108	107	104	89	102	98	86	102	85
Tenth	121	100	104	103	100	86	98	95	83	98
Eleventh	115	115	95	99	98	95	82	94	91	79
Twelfth	110	116	116	95	99	98	95	82	94	91
Total 9-12	450	439	422	401	386	381	373	357	370	353
% Change	-0.88	-2.44	-3.87	-4.98	-3.47	-1.30	-2.10	-4.29	3.64	-4.59
Total K - 12	1,225	1,206	1,160	1,123	1,107	1,089	1,070	1,056	1,054	1,039
% Change	-1.69	-1.55	-3.81	-3.19	-1.42	-1.63	-1.74	-1.31	-0.19	-1.42

Live Births vs Kindergarten Enrollment Comparison

Baseline Projection



Enrollment Projection Breakdown Based on Live Births



K-12 Enrollment Projection Based on Live Births

